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**Chen, Junfeng** (PRC-XYNU-SMI); **Shu, Shichang** (PRC-XYNU-SMI)

**Weingarten spacelike hypersurfaces in a de Sitter space. (English summary)**

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In this article the authors study spacelike hypersurfaces $M^n$ in an $(n+1)$-dimensional de Sitter space $S_1^{n+1}(1)$. More precisely, they consider two classes of hypersurfaces $M^n$ which have two distinct principal curvatures. On the one hand, they examine hypersurfaces which satisfy a linear Weingarten relation $\alpha R+\beta H+\gamma=0$ where $R$ is the scalar curvature, $H$ is the mean curvature and $\alpha$, $\beta$ and $\gamma$ are constants such that $\alpha^2+\beta^2\neq 0$. These hypersurfaces are called linear Weingarten spacelike hypersurfaces. On the other hand, hypersurfaces for which $\rho^2=S-nH^2$ is a nonzero constant are studied. Here $S$ is the square of the length of the second fundamental form. These hypersurfaces are called constant $\rho$ Weingarten spacelike hypersurfaces.

Several lemmas that are used to obtain two classification theorems of linear Weingarten spacelike hypersurfaces and of constant $\rho$ Weingarten spacelike hypersurfaces are stated, some of them with a proof. The classification theorems contain the Riemannian product $H^k(1-\coth^2\varrho)\times S^{n-k}(1-\tanh^2\varrho)$, where $1<k<n-1$, the hyperbolic cylinder $H^1(1-\coth^2\varrho)\times S^{n-1}(1-\tanh^2\varrho)$ and the spherical cylinder $H^{n-1}(1-\coth^2\varrho)\times S^1(1-\tanh^2\varrho)$.

Reviewed by *Wendy Goemans*